

Lead poisoning control activities developed by coordination of federal, local, and private agencies in Cincinnati and Norfolk were intended to check Public Health Service guidelines. It has been shown that sectors can work together effectively. Programs are described.

# Breaking the Childhood Lead Poisoning Cycle — A Program for Community Casefinding and Self-Help

## Introduction

At a time when the association between environmental pollution and human health is receiving considerable attention, childhood lead poisoning continues to be a major problem plaguing the children of the urban centers. Recent estimates of the number of potential cases of lead poisoning in children range from 200,000 to 400,000 cases yearly. Of these, 2 - 4,000 are said to suffer damage to the central nervous system, and an estimated 200 deaths occur each year as the result of recent or long-term effects of lead poisoning.

Recent technological advances in the areas of lead detection in both the child and in dwelling units, as well as the willingness of many communities to employ their many resources for dealing with community health problems, has enabled the Public Health Service to establish guidelines for the development of comprehensive community lead poisoning control programs. The importance of community involvement in the initial planning phases, as well as the implementation, of any community-based lead control program cannot be overemphasized. Childhood lead poisoning is a complex social problem made up of inter-related medical, educational, and environmental components. Obviously, any comprehensive plan to eradicate the disease must necessarily involve the specific community's residents and community organizations that are most familiar with the various elements of the problem.

The immediate task for any community that is considering establishing an active lead poisoning control program is twofold. First the children at greatest risk in the community must be located, screened for increased levels of blood lead, and treated when indicated. Secondly, and perhaps more important as far as the overall elimination of the lead poisoning hazard for children is concerned, the source of the lead-based paint that the child has ingested must be located and made unavailable for further ingestion by the child. It is obvious that any program designed to control or eliminate lead-based paint poisoning in a community must be based on a thorough understanding of the epidemiology of the lead problem in that community.

While it seems likely that federal funds will be made available for individual community lead control activities, it

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is probable that this money will be used primarily for the initial phases of community programs. It becomes apparent that communities desiring to establish comprehensive, ongoing lead control programs must concentrate on utilizing presently available resources, both federal as well as locally funded. The guidelines for the development of lead poisoning control programs, emphasizing this aspect of utilizing already existing community resources have recently been tested in Cincinnati, Ohio and Norfolk, Virginia.

A brief account of the recent events relating to the lead problem in the City of Cincinnati will be examined. Prior to January of 1971 there was no health care facility in the City of Cincinnati that was involved in an active, ongoing program dealing with childhood lead poisoning. This fact was apparent, despite the fact that the city has a number of demographic characteristics that are known to be associated with a high incidence of the disease. A sizeable proportion of the poor population lives in substandard housing, built prior to World War II. In spite of the lack of an active casefinding program in the city, 126 children with symptomatic lead poisoning had been treated at Cincinnati Children's Hospital between 1960 and 1970, including 12 who died from the disease. Regarding the housing aspect of the problem, a Board of Health regulation calling for the enforced removal of lead-based paint in excess of 1% from dwelling units was enacted in 1960, but was seldom, if ever, enforced in recent years.

In January 1971 an ad hoc group made up of physicians from Children's Hospital, nurses, a social worker, interested medical students and several neighborhood representatives was formed to plan an initial screening survey. Two Public Health Service pediatricians from the Bureau of Community Environmental Management served as consultants to the group. Sources for funding the project were sought; after exhausting many possibilities, it became evident that no federal, state, or city funds were available. However, a large private drug firm donated \$1,000 for the project. Plans were made with

Children's Hospital to manage any child that was discovered to be in need of treatment, and a Lead Clinic for long-term follow-up was established at Children's Hospital.

Several informal training sessions were conducted for a small group of neighborhood health aides who volunteered to pre-register children from the neighborhood selected. Members of the Mt. Auburn Good Housing Foundation, a local community improvement group, agreed to carry out housing inspections in any dwelling where a child with elevated blood level lived. Two portable X-ray fluorescence analyzers were furnished by the Public Health Service and were used to determine the presence of hazardous lead on the walls and other surfaces of the homes where the children lived.

A team of volunteer physicians, nurses, and medical students took part in the actual screening of the children in February. Blood drawing stations were set up in two existing neighborhood health clinics and children were screened over a seven-day period. Social history and housing information was recorded for each child and formed the basis for the central case registry. Venous blood was drawn from each child and the lead determinations were performed by the Kettering Institute, located in Cincinnati, using an atomic absorption method. A total of 81 children between the ages of 1-6 were screened in this first phase of the project, with 17 (23%) of the children having blood lead determinations exceeding 40 ug%.

Following this screening phase, the homes where children with elevated blood leads lived were examined for the presence of lead on the walls. Public Health nurse home visits were made to all families of the children with elevated lead levels. Where a child had a blood lead level that exceeded 60 ug%, a referral to the environmental services division of the City Health Department was made, and it was requested that a sanitarian visit the home for the purpose of investigating the possibility of deleading measures. When the final results of the survey were available, several neighborhood meetings were held to explain the results and their significance to the parents. Temporary emergency repair and clean-up measures were discussed at the meetings, as well as plans for further community surveys to include a larger number of children. All of the children with elevated levels of blood lead were registered with the lead clinic at Children's Hospital, and were given appointments for follow-up visits to the clinic.

Soon after the results of this initial survey were made public, planning for a more extensive survey to be carried out in the early part of the summer was begun. As publicity of the initial survey was noted throughout the community, increased demands were made to the city council as well as the Health Department regarding lead poisoning prevention activities. Approximately \$2,500 from the Mt. Auburn Community Council was made available for the follow-up survey. Another \$500 obtained from private sources was used to hire and train ten local teenagers to assist in the program. In the second phase of the survey, 194 children were screened and 62 (32%) were discovered who had elevated levels of blood lead. Nine of these children were subsequently diagnosed as having lead poisoning and were hospitalized and treated. The determinations were performed by the anodic stripping voltammetry method, using a sample of capillary blood.

Following the results of this second survey, the Cin-

cinnati Health Department took a number of steps aimed at increasing its capability to deal with lead poisoning in the community. Plans were made to offer blood lead tests to any child between the ages of 1-6 in all of the city pediatric clinics. City sanitarians began issuing orders to landlords for removal of lead-based paint from any home where a child with elevated blood lead was found. A supplemental request for \$48,000 to be used for lead poisoning prevention activities was made by the health department to the city council. And finally, a committee to develop a grant proposal requesting funds from P.L. 91-695 was formed.

As a result of these activities, over 100 children are currently being followed closely in the lead clinic, and continued surveillance to detect new cases is taking place. There is an increased level of awareness about lead poisoning that is evident among both community residents as well as the city's health professionals.

The development of the lead poisoning control program in the City of Norfolk, Virginia differs somewhat from that observed in Cincinnati. The main difference involves the city health department's role in the planning and initial stages of the program. Whereas the Cincinnati experience was initiated through the combined effort of a number of independent community agencies, with the health department becoming involved at a later time, the Norfolk health department was the agency that coordinated the program, involving a number of community organizations.

As in Cincinnati, a number of cases of lead poisoning were being reported in Norfolk each year, but there was no coordinated lead control program for the city. In August of 1970 the Lead Poisoning Advisory Committee, a sixteen-member committee representing various community interests, was formed. The Committee developed plans to provide direction in conducting a city-wide lead poisoning prevention and control plan. Plans were made to establish training courses for the various disciplines that would eventually play a part in the program. Existing housing codes were studied and certain improvements were recommended.

A number of sampling stations were set up in various neighborhoods around the city. In a one-year period from September 1, 1970 to August 31, 1971, 1,005 blood samples were obtained from children between the ages of 1-5. Two hundred and seventy-nine or 27% of the total had blood lead levels that exceeded 40 ug%, and 76 or 7.5% had levels that were in excess of 60 ug%. During this period, 34 children were admitted to King's Daughters Children's Hospital for definitive treatment of lead poisoning.

At the present time, a number of modifications of the program in Norfolk are taking place. The Norfolk City Health Department has recently made a service available to all practicing physicians in the city where blood lead tests can be provided for children seen in their offices. Community education programs are continuing, and in general, it is thought community awareness of childhood lead poisoning has improved throughout the city.

The lead poisoning control activities that have been developed by the coordination of the various federal, local, and private agencies in Cincinnati and Norfolk are intended to serve as validations of the Public Health Service guidelines and only as a beginning for the more difficult

task of eventually eliminating the lead hazard for the cities. However, it has been conclusively shown that these sectors can work together effectively so that this disease can be

eliminated. Childhood lead poisoning control programs provide an excellent opportunity for putting the "public" back into public health.

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### APHA Sues Department of Agriculture for Misleading Labeling

Consistent refusals by the U.S. Department of Agriculture to provide adequate labeling instructions on how to avoid food poisoning from disease-causing raw poultry and meat products have resulted in a public interest law suit against the Secretary of Agriculture and the administrator of USDA's Consumer and Marketing Service, brought by APHA and six other organizations.

The suit, filed March 27 in the U.S. District Court, District of Columbia, charges that the Secretary has violated his statutory duty under the Wholesome Meat Act and the Wholesome Poultry Products Act to assure that meat and poultry products are not adulterated or misbranded when delivered to the consumer. USDA has repeatedly refused to attach instruments for safe handling and cooking of these products even though it admits that they often contain salmonella and other bacteria that can cause food poisoning.

Joining APHA in bringing suit against Secretary Earl Butz and Clayton Yeutter, the USDA official designated as administrator of the provisions of the two meat laws, were the New Jersey Public Health Association, the New Jersey Academy of Veterinary Medicine and Surgery, the New Jersey Health Officers Association, the Professional Health Officers Association of New Jersey, the New Jersey Association of Sanitarians, the Center for Analysis of Public Issues, and two authorities on food-borne illness—Oscar Sussman, D.V.M., a New Jersey Health Department official, and Harrison Wellford, consultant to the Center for Study of Responsive Law.

Food poisoning can be caused by raw meat and poultry when it is insufficiently cooked or when foods—such as salads which are not cooked—become contaminated by contact with the meat or poultry, the surfaces on which it was prepared, or the cook's hands. Currently, USDA inspects processing facilities and the products themselves at the point of manufacture, and labels meat for interstate commerce as "U.S. Inspected and Passed" and poultry as "U.S. Inspected for Wholesomeness." No notice is given on the label to warn of possible contamination or to inform the consumer of proper handling and cooking procedures.

The Wholesome Meat Act and Wholesome Poultry Products Act specify that the Secretary of Agriculture must direct that labels on these products contain instructions to the consumer on how to prepare and handle the inspected product so as to insure its wholesomeness.

Between 15 per cent and 50 per cent of federally inspected meat and poultry have been found to be contaminated by salmonella. In a sworn affidavit filed with the court, Sussman cited these figures, and detailed one case of food poisoning.

The suit seeks to have the court rule that USDA officials have violated their statutory duty, and that within 30 days USDA should propose new regulations, requiring that labels on inspected raw meat and poultry products contain instructions to the consumer on the proper storage, cooking, and handling precautions necessary to minimize the risk of salmonella and other bacterial food poisoning.

In addition, the suit seeks to enjoin USDA, after a suitable period of time, from using the "U.S. Inspected and Passed" and the "U.S. Inspected for Wholesomeness" labels on raw meat and poultry products until new labeling regulations become effective.